

**REMARKS****Amendments**

The claims have been amended for clarification purposes. It is respectfully submitted that the amendments do not add new matter, but merely restate that which was present in the claim previously.

AMENDED CLAIM RECITATION	CLAIM SUPPORT IN CLAIM AS ORIGINALLY PRESENTED
a plurality of windows of fixed size of the genome, each of said windows having the fixed size, [claims 90 and 99]	a plurality of windows of fixed size of the genome,
the pieces within each window [claims 92-95, 104-107]	the pieces within the window map within
pieces are [claims 96 and 108]	piece is

It is respectfully submitted that no new matter is added by this amendment.

**The Rejection of Claims 92-96 and 104-108 Under 35 U.S.C. § 112, second paragraph**

Claims 92-96 and 104-108 stand rejected as indefinite. This rejection is respectfully traversed. Each of the rejected claims is amended above to address the particular issue raised with respect to that claim.

Dependent claims 92-95 and 104-107<sup>1</sup> stand rejected for the phrase “pieces with *the window* map within...kb” but the independent claims from which they depend, claims 90 and 99, recite “a *plurality of windows* of fixed size.” Thus, the rejection urges that it is not clear to which window the dependent claims refer.

Claims 92-95 and 104-107 have been amended to recite “each window” to clarify that the dependent claims refer to all of the windows recited in the independent claims. It is respectfully

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<sup>1</sup> Claim 108 was listed in this group, but apparently in error. The particular ground for rejection does not apply to it.

submitted that the claims now agree (in number) with each other and are clear.

Claims 96 and 108 stand rejected because they each recite “the piece,” whereas the independent claims from which they depend recite “pieces of the genome” and “pieces.” Claims 96 and 108 have been amended to recite “pieces” putting them in number agreement with the independent claims from which they depend.

All clarity issues raised in the context of the lack-of-clarity rejection having been addressed by amendment, applicants request withdrawal of this rejection.

The U.S. Patent and Trademark Office also notes that claims 90 and 99 recite the phrases “pieces within a plurality of windows of fixed size of the genome” and “each window comprises a plurality of pieces and the pieces within a window are genomically clustered.”<sup>2</sup> The Office Action further notes that “the claim as written does not require that one window of “fixed size” is the same “fixed size” of another window in the recited plurality of windows. Claims 90 and 99 have been amended to clarify that all windows within the plurality of windows are of the same fixed size.

It is respectfully submitted that this clarifying amendment addresses the issue raised.

#### The Rejection of Claims 90, 92-95, 97-107, and 109-110 Under 35 U.S.C. § 102(a)

Claims 90, 92-95, 97-107, and 109-110 stand newly rejected as anticipated by Bensimon.<sup>3</sup> This rejection is respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the ... claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis* verbis test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

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<sup>2</sup> Office Action at last paragraph of page 3 to first paragraph of page 4.

<sup>3</sup> US Patent Application 2002/0048767.

Bensimon's teachings are substantially different from the claimed methods. Even giving the claim terms the broadest possible constructions, Bensimon does not fall within them.

Each of independent claims 90 and 99, the only independent claims of the rejected claim set, recite three steps. Step 1 of each recites "identifying pieces of the genome of the test eukaryotic cell by determining nucleotide sequence of said pieces." Bensimon fails to teach this step.

The Office Action points to paragraphs 0027-0031 and 0152 as teaching this step. However, Bensimon does not in these paragraphs, or in any other passage applicants have located, teach this step.

Paragraphs 0027-0031 purport to describe the state of the art research methods for identifying genomic sequences responsible for diseases. See paragraphs 26 and 27, in particular. Paragraph 28 simply discloses collection of samples from affected individuals. Paragraph 29 describes linkage analysis. Paragraph 30 describes physical mapping and cloning of a region determined to be involved in the disease. Paragraph 31 teaches the use of cDNA libraries, CpG islands, preservation of interspecific sequences to assign a coding sequence to one or more clones. Paragraph 0152 teaches the location or detection of products capable of reacting with combed DNA. Such products are proteins. Their binding sites can be determined. In none of these paragraphs does Bensimon teach nucleotide sequence determination of pieces of a genome of a test eukaryotic cell, as recited in step 1.

The failure of Bensimon to teach the very first step of the method underscores the fact that other parts of the reference that the U.S. Patent and Trademark Office alleges teach parts of the claimed method are plucked out of their context and applied willy-nilly to the claimed methods. The random extraction, rearrangement, and stitching together of isolated words and sentences does not constitute a teaching of the invention.

The failure to teach step 1 is sufficient to prevent Bensimon from constituting an anticipatory reference. Nonetheless, to be complete, we note that Bensimon also does not teach step 2 of claims 90 and 99. Bensimon does not teach enumerating pieces of the genome of a test eukaryotic cell within a plurality of windows of a fixed size, each of said windows having the fixed size, wherein each window comprises a plurality of pieces and the pieces within a window

are genomically clustered.

The Office Action points to probes which hybridize to genomic DNA as being “pieces of a genome.” Page 6, line 3. But the probes are not pieces of the genome of a test eukaryotic cell, as the claims require. Thus while Bensimon may determine the sum of sizes of probes, Bensimon does not “enumerate the pieces [of the genome of the test eukaryotic cell] within a plurality of windows....” The plain meaning of enumerating is counting; determining the sum of sizes of objects is not the same as counting the number of such objects. Thus Bensimon does not teach step 2 of claims 90 or 99.

If Bensimon does not teach identifying or enumerating [counting] pieces of the genome of a test eukaryotic cell, perforce he does not teach comparing the number of pieces enumerated within a plurality of windows from the test cell to the same for a reference cell. Thus Bensimon does not teach step 3 of claims 90 or 99.

The rejection should be withdrawn as improvidently made.

#### The Rejection of Claims 96 and 108 under 35 U.S.C. § 103(a)

Claims 96 and 108 stand rejected as obvious over Bensimon (*supra*) in view of Kong (US 5200336). This rejection is respectfully traversed.

Claims 96 and 108 are dependent from claims 90 and 99, respectively. For at least the reasons detailed above, Bensimon does not teach the methods of claims 96 and 108. Kong’s teaching of BclI and its recognition and cleavage patterns does not cure the inadequacies of Bensimon in teaching the methods of claims 90 and 99. The steps of (a) identifying by determining nucleotide sequence of pieces of test eukaryotic cell genome, (b) enumerating the pieces within windows, and (c ) comparing the number of pieces within a window of the test cell to the number determined similarly for a reference eukaryotic cell, are not taught by *either* Bensimon or Kong. Thus even combining the two teachings, the subject matter of claims 96 and 108 is not taught.

The Office Action points to the reference teachings of cloning and probing. The relationship of these procedures to any of the recited steps is not explained. Neither of these

procedures appears to have any relationship to the claimed methods of identifying, enumerating, and comparing.

Because so much of the present invention is not taught or in any way suggested by the cited references, the rejection fails to present a *prima facie* case of obviousness. Withdrawal is therefore respectfully requested.

Conclusion

Applicants respectfully request that the patentability of the current set of claims be reconsidered. Applicants request that the next communication from the Patent Office be a Notice of Allowance.

Respectfully submitted,

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